

DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17****RIN 1018-AB38****Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Gulf Sturgeon****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: The Service proposes to determine the Gulf Sturgeon (*Acipenser oxyrinchus desotoi*) to be a threatened species, pursuant to the Endangered Species Act of 1973 (Act), as amended. This large fish has a range that extends from Lake Pontchartrain in Louisiana to Tampa Bay in Florida. Gulf sturgeon stocks have been greatly reduced or extirpated throughout much of the historic range by overfishing and dam construction. This proposal, if made final, would implement the protection and recovery provisions afforded by the Act for the sturgeon. The Service seeks data and comments from the public on this proposal.

DATES: Comments from all interested parties must be received by July 2, 1990. Public hearing requests must be received by June 18, 1990.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, Jacksonville Field Office, U.S. Fish and Wildlife Service, 3100 University Boulevard South, Suite 120, Jacksonville, Florida 32216. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: David J. Wesley, Field Supervisor, at the above address (904/791-2580 or FTS 946-2580).

SUPPLEMENTARY INFORMATION:**Background**

The Gulf sturgeon (*Acipenser oxyrinchus desotoi*), also known as the Gulf of Mexico sturgeon, is a subspecies of the Atlantic sturgeon (*Acipenser oxyrinchus*). The Gulf sturgeon was described by Vladykov in 1955. It is a large, nearly cylindrical fish with an extended snout, ventral mouth,

chin barbels, and with the upper lobe of the tail longer than the lower. Adults range from 1.8-2.4 meters (6-8 feet) or more in length, with adult females larger than males. The skin is scaleless, brown dorsally and pale ventrally, and imbedded with five rows of bony plates. The Gulf sturgeon has a longer head, pectoral fins, and spleen than the related Atlantic sturgeon (Huff 1975, Wooley 1985).

The following information is derived primarily from Barkuloo (1988). Historically, the Gulf sturgeon occurred from the Mississippi River to Tampa Bay, Florida. It still occurs, at least occasionally, throughout this range, but in greatly reduced numbers. The fish is essentially confined to the eastern Gulf of Mexico, possibly because this portion of the Gulf has predominately hard bottoms that are better suited to the Gulf sturgeon's feeding habits. (The western Gulf has mostly mud, clay, and silt bottom sediments.) Adult fish are bottom feeders, eating primarily invertebrates, including brachiopods, insect larvae, mollusks, worms, and crustaceans. Gulf sturgeon are anadromous, with reproduction occurring in fresh water but with most adult feeding taking place in the Gulf of Mexico and its estuaries. The fish probably return to breed in the same river system in which they hatched. Adult sturgeon enter the Apalachicola and Suwannee River systems from February through April. Spawning is believed to occur in areas of deep water and clean (rock, gravel, or sand) bottoms. The eggs are sticky and adhere in clumps or strings to snags, outcroppings, or other clean surfaces. Larvae have been collected in April and May in the Apalachicola River. Adults remain in fresh water as late as November. The adults lose weight while in fresh water but regain it while wintering in estuaries or the Gulf of Mexico. In the Suwannee River, Florida, female sturgeon require 8 to 12 years, and males 7 to 10 years, to reach sexual maturity (Huff 1975). The Gulf sturgeon, therefore, is a slow-maturing, long-lived fish.

The Gulf sturgeon has historically been of commercial importance, with the eggs used for caviar, the flesh for smoked fish, and the swim bladder yielding isinglass, a gelatin used in food products and glues. Available landing records for Gulf sturgeon indicate that the only consistent historic fisheries were in Florida and Alabama, with no directed fishing in the other Gulf States; only by-catch from other fishing. In Florida, recorded catches peaked about the turn of the century, and while fluctuating over the years, have

decreased drastically since that time. The decline was initially due to overfishing, but subsequent dam construction has impacted habitat and eliminated or seriously reduced some populations in more recent years.

Service involvement with the Gulf sturgeon began with monitoring and other studies of the Apalachicola River population by the Panama City, Florida Fisheries Assistance Office in 1979. The fish was included as a category 2 species in the Service's December 30, 1982 (47 FR 58454) and September 18, 1985 (50 FR 37958) vertebrate review notices and in the January 6, 1989 (54 FR 554) animal notice of review. These notices indicated that the Gulf sturgeon was a species for which listing as threatened or endangered was possibly appropriate. In 1980, the Service's Jacksonville, Florida Area Office contracted a status survey report on the Gulf sturgeon (Hollowell 1980). The report concluded that the fish had been reduced to a small population due to overfishing and habitat loss, and that any further adverse changes would make its survival questionable. In 1988, the Service's Panama City, Florida, Fisheries Assistance Office completed a report (Barkuloo 1988) on the conservation status of the Gulf sturgeon. The report recommended that this subspecies be listed as a threatened species pursuant to the Act.

The Service and the National Marine Fisheries Service executed a Memorandum of Understanding (MOU) in 1974 regarding jurisdictional responsibilities and listing procedures under the Endangered Species Act. One of the purposes of the MOU was to define respective agency jurisdiction. Both agencies have agreed that it is in the best interest of the sturgeon to publish the listing proposal without further delay and to resolve the jurisdictional question prior to publication of the final rule.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal list. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The Gulf sturgeon formerly ranged from the Mississippi River eastward to the Tampa Bay area on the west coast of Florida. Three major rivers (the Pearl in Mississippi, the Alabama in Alabama, and the Apalachicola in Florida) within the range of the Gulf sturgeon have been dammed, preventing use of upstream areas for spawning. The Gulf sturgeon is apparently unable to pass through dam systems. Wooley and Crateau (1985) estimated that construction of the Jim Woodruff Lock and Dam on the Apalachicola River in the 1950's restricted Gulf sturgeon to 172 kilometers (107 miles) of the 1,018 kilometers (636 miles) of river habitat formerly available in the Apalachicola-Chattahoochee-Flint River system. Prior to dam construction, the Gulf sturgeon used all three rivers; subsequently the fish has been restricted to that portion of the Apalachicola River below the dam. Even if the Jim Woodruff Dam could be passed by Gulf sturgeon, the tributaries of the Apalachicola have many additional dams; 14 on the Chattahoochee and three on the Flint. A breeding population of Gulf sturgeon in Bear Creek, Bay County, Florida, was apparently extirpated due to construction of a dam in 1962.

In addition to the structures preventing Gulf sturgeon from reaching spawning areas, dredging, desnagging, and spoil deposition carried out in connection with channel improvement and maintenance represent a threat to the Gulf sturgeon. Although precise spawning areas are not known, indications are the deep holes and rock surfaces are important for spawning. Modification of such features, especially in rivers in which upstream migration is already limited by dams, could further jeopardize the already reduced stocks of the Gulf sturgeon.

The majority of the range of the Gulf sturgeon is along the panhandle and northwest peninsula coasts of Florida. Tampa Bay, Florida, was the site of the first significant fishery for the Gulf sturgeon. Fifteen hundred fish were taken when the fishery began in 1886-1887, 2,000 in 1887-1888, and only seven fish in 1888-1889, at which time the fishery ended. Only occasional Gulf sturgeon have been taken there since that time. These are believed to originate in other river systems; the Tampa Bay breeding population is considered extirpated.

The Apalachicola River population of the Gulf sturgeon supported a major fishery at the beginning of the century,

but population estimates from 1883-1988 by the Service's Panama City, Florida Fisheries Assistance Office range from 60-285 fish. Any additional decline in this population could result in its extirpation. The Ochlockonee River supported a fishery until the 1950's, but no Gulf sturgeon have been reported there in recent years.

The Suwannee River is believed to support the healthiest remaining population of the Gulf sturgeon, and the population currently appears stable. Steve Carr (in Barkuloo 1988) of the Caribbean Conservation Foundation caught and released 300 Gulf sturgeon during a tagging program in 1988, and 500 in 1989. The population may have been reduced seriously following a large commercial harvest in 1983-1984, however. The Suwannee River currently has good water quality but future development in its watershed has the potential to lower water quality there.

Gulf sturgeon populations in other states are believed to remain low following overfishing and habitat change earlier in the century. Based on the limited data available, the Gulf sturgeon is rare in these states. Incidental catches of Gulf sturgeon are unusual enough in some areas to attract newspaper accounts.

Alabama formerly supported a Gulf sturgeon fishery; commercial landing records from 1927 to 1964 show a decline from a range of 2,850-15,134 pounds taken during the first five years of the fishery (1927-1931) to 100-3,500 pounds in the last five years (1960-1964). Gulf sturgeon have been taken in the Mobile River system as recently as 1986 and 1987, but captures in coastal waters have not been reported since 1980.

In Mississippi, Miranda and Jackson (1987) collected a Gulf sturgeon from the Pascagoula River in June 1987 during 30 net-nights of efforts. They reported the capture of another Gulf sturgeon on the Chickasawhay, a tributary of the Pascagoula, in 1985.

In 1988 the Louisiana Department of Wildlife and Fisheries began collecting information on Gulf sturgeon. As of March 1989, specimens had been recorded from Lake Pontchartrain (a total of six adults and subadults), Halfmoon Island (one juvenile), and the Pearl River (one adult and five juveniles). Dr. Frank Petzold of Mississippi State University caught 63 juvenile to subadult Gulf sturgeon in the Pearl River in 1985. While Miranda and Jackson took no Gulf sturgeon in that river during the 46 net-nights in June 1987, Dwight Bradshaw (pers. comm.) of Mississippi State University believes

that significant numbers of Gulf sturgeon remain in the Pearl.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Although there currently is no directed fishery for Gulf sturgeon, incidental take by commercial shrimpers and gill net fishermen may be significant (Wooley and Crateau 1985). Use of turtle excluder devices (TEDS) on shrimp trawls may help reduce incidental catch.

C. Disease or Predation

Not known to be a factor.

D. The Inadequacy of Existing Regulatory Mechanisms

The Gulf sturgeon is listed as a species of special concern by the Florida Game and Fresh Water Fish Commission (title 39-27.05, Florida Administrative Code) and as an endangered species by the Mississippi Department of Wildlife, Fisheries, and Parks. Take is prohibited in both states. Take of Gulf sturgeon in Alabama is prohibited (chapter 220-2-26 of Regulations of Department of Conservation and Natural Resources), but is legal in Louisiana. There is currently no known directed fishery for the Gulf sturgeon anywhere in its range.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Since the Gulf sturgeon is slow to mature, it is unable to rapidly establish a breeding population. The fish probably return to their natal river to breed; if so, recolonization of extirpated populations from other river systems is likely to be slow.

Poor water quality may also be a threat. All major rivers in the fish's historic range have had heavy pesticide use in their watersheds, and some receive contamination from heavy metals and industrial contaminants. Several large Gulf sturgeon from Apalachicola River have been found to have potentially detrimental levels of organochlorines and heavy metals in their tissues. While the effects of these contaminants are not certain, they have the potential for being detrimental to the sturgeon's survival.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list the Gulf sturgeon as threatened. The species has declined seriously throughout its range, and has been extirpated in some

portions of that range. Although not yet an endangered species, it is likely to become one in the foreseeable future if further habitat loss or degradation occurs.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for the Gulf sturgeon. The species feeds over large areas of the Gulf of Mexico, and spawns in most of the larger rivers draining into the eastern Gulf. Each major river system in the eastern Gulf is believed to support its own breeding population. It would be impractical to designate critical habitat over this large area, and it would be misleading to designate smaller, isolated areas. The highly migratory, wide-ranging behavior of the Gulf sturgeon requires very large areas of coastal waters and these areas are not currently understood. Protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed

subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal actions which are most likely to affect the Gulf sturgeon are the permitting programs and Federal water resource projects of the U.S. Army Corps of Engineers. Activities that would potentially involve section 7 of the Act include dredging of river channels, spoil deposition, and dam construction. Another potential section 7 involvement is pesticide registration by the U.S. Environmental Protection Agency.

The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving threatened wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22, 17.23, and 17.32. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. For threatened species, there are also permits for zoological exhibition, educational purposes, or special purposes consistent with the Act.

The Service wishes to encourage continued scientific research and conservation efforts for the Gulf sturgeon, and realizes that take will be necessary in some of this work. If the Gulf sturgeon is listed as a threatened species, take of Gulf sturgeon for scientific, enhancement, and conservation purposes will be allowed under two mechanisms. First, 50 CFR

17.31(b) allows conservation programs for threatened species, including take, to be carried out by employees and agents of the Fish and Wildlife Service, the National Marine Fisheries Service, and any state agency that is operating a conservation program pursuant to section 6(c) of the Act. Florida, Georgia, and Mississippi currently have section 6 Cooperative Agreements with the Service. Secondly, those parties wishing to carry out conservation activities for the Gulf sturgeon, but not included in the agencies listed above, would be able to apply for permission from the Service's Southeastern Regional Office (Atlanta, Georgia). If the Gulf sturgeon is listed as a threatened species, the Regional Office will request that the Gulf sturgeon be included under its regional blanket permit authority, as are most other species in the region. This will enable the Regional Office to permit take of Gulf sturgeon for scientific purposes, enhancement of survival, and other conservation purposes, pursuant to 50 CFR 17.22.

On July 1, 1975, the Atlantic sturgeon (*Acipenser oxyrinchus*, including the Gulf sturgeon) was included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The effect of this listing is that both export and import permits are generally required before international shipment may occur. Such shipment is strictly regulated by CITES party nations to prevent effects that may be detrimental to the species' survival. Generally, the export or import cannot be allowed if it is for primarily commercial purposes.

Ongoing conservation work on the Gulf sturgeon is being done by the Service's Panama City, Florida Fisheries Assistance Office and Gainesville, Florida, National Fisheries Research Center; by the Florida Department of Natural Resources, and by the private Caribbean Conservation Corporation, funded by the Phipps Florida Foundation. The Gulf States Marine Fisheries Commission's Technical Coordinating Committee agreed in 1989 that their Anadromous Fish Subcommittee would begin preparation of a management plan for the Gulf sturgeon during 1990.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any

other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of publication of the proposal. Such requests must be made in writing (see **Addresses** section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the

authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

- Barkuloo, J.M. 1988. Report on the conservation of the Gulf sturgeon. Unpublished report. U.S. Fish and Wildlife Service, Panama City, Florida. 33 pp.
- Hollowell, J.L. 1980. Status report for the Gulf of Mexico sturgeon, *Acipenser oxyrhynchus desotoi* (Vladykov). Unpublished report prepared for U.S. Fish and Wildlife Service, Jacksonville Area Office. 9 pp.
- Huff, J.S. 1975. Life history of the Gulf of Mexico sturgeon, *Acipenser oxyrhynchus desotoi*, in the Suwannee River, Florida. Mar. Res. Publ. No. 32 pp.
- Vladykov, V.D. 1955. A comparison of the Atlantic sea sturgeon with a new subspecies from the Gulf of Mexico (*Acipenser oxyrhynchus desotoi*). J. Fish. Res. Board Canada 12(5):754-761.
- Wooley, C.M. 1985. Evaluation of morphometric characters used in taxonomic separation of the Gulf of Mexico sturgeon, *Acipenser oxyrhynchus desotoi*. Pp. 97-113 in F. Binkowski and S.I. Doroshov, ed.: North American sturgeon. Developments in environmental biology of fishes, Vol. 6. W. Junk Publ., the Netherlands.

Authors

The primary authors of this proposed rule are Dr. Michael M. Bentzien (see **Addresses** Section) and Mr. James Barkuloo, U.S. Fish and Wildlife Service, 1612 June Avenue, Panama City, Florida 32401.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Fish, Marine mammals, Plants (agriculture).

Proposed Regulation Promulgation

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1543; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500, unless otherwise noted.

2. It is proposed to amend § 17.11(h) for animals by the adding the following, in alphabetical order under "FISHES" to the List of Endangered and Threatened Wildlife.

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
FISHES							
Sturgeon, Gulf	<i>Acipenser oxyrhynchus desotoi</i> .	U.S.A. (AL, FL, GA, LA, MS) ..	Entire	T	NA	NA

Dated: April 12, 1990.

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

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